

MaxCell® Flexible Fabric Innerduct

Capitalize on your conduit capacity by utilizing MaxCell

MaxCell is the only flexible, multi-celled, textile innerduct system designed specifically for the network construction industry.

The unique textile construction allows MaxCell to conform to the shape of cables placed within, greatly reducing the wasted space associated with rigid innerduct.

Today's network owners and builders use MaxCell to increase their cable density by as much as 300%. Faced with the challenge of deploying new infrastructure while minimizing investment costs, using MaxCell will:

- Reduce the number of conduits required for new network construction
- Minimize need for additional conduit in overlay applications
- Enable incremental cable deployment to match system requirements

MaxCell is a versatile solution for the complex problems faced by today's engineers, contractors, and network providers. MaxCell configurations include one, two, and three cell designs for use in 1.25" or larger conduits; and most are available in Standard, Plenum and Detectable versions.

MaxCell Saves Time & Money

- Easily install cable, even in occupied conduit
- Reduces material and labor costs by 50% or more in most applications
- Minimizes labor to help keep projects on schedule

MaxCell Meets Your Needs

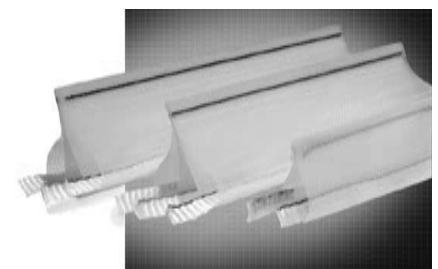
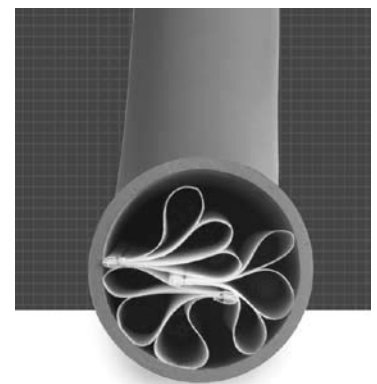
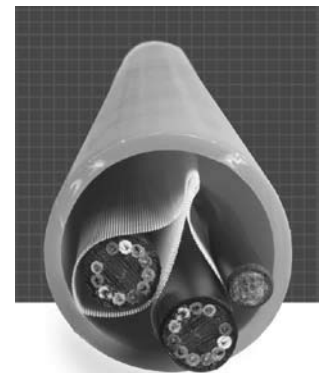
- Standard, Detectable and Plenum versions
- Multiple product configurations
- Accepts cables up to 1.37" O.D.
- Standard and custom lengths

MaxCell is Durable

- Tensile strength exceeds 2,500 lbs.
- Melting point of 419°, almost twice that of HDPE
- Resistant to ground chemicals and petroleum products
- Unaffected by mud, silt or debris after placement of cable

MaxCell is Easy to Use

- No reel memory and will not spiral when installed with a swivel
- Designed to work with standard cable reel carriers
- Pre-lubricated for lower friction during product and cable installation
- Pre-installed color coded pull tapes for quick identification



Detectable MaxCell®

For Reliable Cable Location

Detectable MaxCell is a reliable method for locating cables deployed in buried conduit network systems. All products lines (Micro to 4") are available with an 18 AWG solid copper core tracer wire inserted into the products.

The tracer wire is inserted into the edge of the MaxCell product, not in the cable pathways providing unique advantages over free-floating tracer wires. It is permanent and it will not be removed once installed, as is the case with detectable pull tape. The MaxCell fabric protects the tracer wire, thus avoiding damage to the wire during cable installation, which commonly occurs with free-floating tracer wires.

Due to the imbedded wire feature, Detectable MaxCell is easy to install and requires no additional pull tapes for installation.

The tracer wire will not become entangled or impede cable installations, nor increase pulling tensions or friction on cables during installation. No special installation techniques will be required beyond standard MaxCell procedures.



Plenum & Riser MaxCell®

Plenum and Riser rated products are Low Smoke Zero Halogen versions for use in premise wiring. These products provide numerous low friction pathways for installation of multiple cables in a variety of building environments – including air handling space, raised floors, cable trays and riser ducts.

- Plenum MaxCell is available in sizes from Micro to 3" 3-Cell
- Riser is available in sizes from Micro to 4"
- All products meet the requirements of Underwriters Laboratory Standard Test Method No. 2024A.



MaxCell® Case Study

The Problem: Add a cable in an existing 2" conduit, 650' long across an Interstate 95 bridge between Maine and New Hampshire. The conduit is occupied with one 216-count fiber cable. There are no bends in the conduit, however there is a three-foot sweep that follows the contour of the bridge. Due to the location of the pull, it was decided to use manual labor only.

The Solution: Install 2" 2-cell MaxCell product to allow additional cable to be introduced into this tight space. One person pushed the rod the full 650' with no power assistance. A rope was placed on the rod and pulled back through the conduit. MaxCell was then attached

to the rope. Two people pulled the rope manually with MaxCell affixed to other end. The first half pulled easily, with little to no resistance. As the pull continued, resistance increased and a grip was needed to finish the installation. There was approximately 100 lbs. of pulling tension at the end of the pull. No lubrication was necessary because MaxCell is pre-lubed.

The Results: MaxCell solved a potentially negative problem with relative ease and provides an option for solving tight situations in the future for Verizon and others who need to capitalize on their existing conduit space.

What Size Cables Can I Put in MaxCell®?

Conduit Size (in)	Suggested Product	Max. Number of Packs	Max. Number of Cables	Optimum Aggregate of Cable O.D. (in)	Max. Aggregate of Cable O.D. (in)	Recommended Pull Length (ft)*	Max. Pull Length (ft)*	Example of Maxcell Aggregate Cable O.D. (in)
1.5	2" 1-Cell	1	–	.65	.75	1,000	1,500	(1) .75
1.5	2" 2-Cell	1	2	1.1	1.25	1,000	1,500	(1) .75 and (1) .50
2	2" 2-Cell	1	2	1.5	1.75	1,250	2,500	(1) 1 and (1) .75
2	2" 3-Cell	1	3	2	2.25	1,250	2,500	(3) .75
3	3" 3-Cell	2	6	4.25	5.25	1,500	3,000	(3) 1 and (3) .75
4	3" 3-Cell	3	9	6.75	7.5	1,500	4,000	(3) 1 and (6) .75
5	3" 3-Cell	4	12	9	10	1,500	4,000	(4) 1 and (8) .75
6	3" 3-Cell	5	15	11.25	12.5	1,500	4,000	(5) 1 and (10) .75
3	4" 3-Cell	1	3	3	3.75	1,500	3,000	(3) 1.25
4	4" 3-Cell	2	6	6.75	7.5	1,500	3,000	(6) 1.25
5	4" 3-Cell	3	9	9.75	10.5	1,500	3,000	(6) 1.25
6	4" 3-Cell	4	12	12.75	123.5	1,500	3,000	(6) 1.25

Micro MaxCell 3310

Designed for use in 1.25" innerduct or larger ducts. The design is especially well suited for placing drop cables in FTTh applications.

Min. Conduit ID (in)	Suggested Product	Max. Number of Packs	Max. Number of Cables	Max. Cable Diameter per Cell (in)	Recommended Pull Length (ft)*	Maximum Pull Length (ft)*
1.25	3310 3-Cell	1	3	.4	800	1,500
1.25	3310 2-Cell	1	2	.4	800	1,500
1	3310 1-Cell	1	1	.4	800	1,500

All cables should be lubricated

*Optimum lengths based on clean, straight and empty conduit. Recommended pull lengths based on non-optimum conditions.

MaxCell® Specifications

Part No.	Description	Conduit Size
MXC2001XX	2" 1-Cell MaxCell	1-1/2" up to 2" Conduit
MXC3456XX	3" 3-Cell MaxCell	3" or Larger Conduit
MXC2003XX	2" 3-Cell MaxCell	2" Conduit
MXC2002XX	2" 2-Cell MaxCell	1-1/2" or 2" Conduit
MXC4003XX	4" 3-Cell MaxCell	3" or Larger Conduit

MaxCell Color Ordering Chart

Replace XX with color code in Part No. when ordering.

Example: MXC3456XX Red = MXC3456RD

Code	Color	Code	Color
RD	Red	YL	Yellow
BL	Blue	PR	Purple
BK	Black	GR	Green
WH	White		



Installing MaxCell

MaxCell® Installation Kits

Cost effective, reusable and tested to be the most efficient means for MaxCell installations

MXCIK11

Kit is a single 1800# Swivel with an Outside Diameter of .875" and is designed for use in installing a single "pack" of any MaxCell product.

MXCIK21

Kit has (3) 1800# Swivel with an Outside Diameter of .875" and (1) 2-Way chain harness and is designed for use in installing 2 "packs" of any MaxCell product at the same time. One swivel acts as the parent from the pulling rope to the harness and the other two attach from the pulling chain harness to the Maxcell packs being pulled in.

MXCIK31

Kit has (4) 1800# Swivel with an Outside Diameter of .875" and (1) 3-Way chain harness and is designed for use in installing 3 "packs" of any MaxCell product at the same time. One swivel acts as the parent from the pulling rope to the harness and the other three attach from the pulling chain harness to the Maxcell packs being pulled in.

Applications commonly require these kits to be augmented with additional product.

To support these requirements, the following kit components are also offered as stand alone parts:

- MXCSW: A single 1800# swivel with an outside diameter (OD) of .875"
- MXC2CH: A 2-way chain pulling harness
- MXC3CH: A 3-way chain pulling harness

Cable Splicer's Kit



The ideal tool for use with MaxCell. Complete kit with 44200 splicer's knife, 2100-7 electrician's scissors with stripping notches, and slotted leather holder for belts up to 2" wide. Dimensions: 2-1/8" x 7-1/2"
Part No. 46037

MaxCell® Termination Systems

Cost-effective inflation bag termination system for non-100% water tight applications. Inflation bags wrap installed MaxCell and inflate to terminate conduit end. Inhibits water, mud, debris or animal intrusion into a conduit. Easily removed or replaced if cable is added or removed at a later time.

Part No.	Duct Size (in)	Max. Cable Combination O.D.'s (in)
MXCITB3	3	2.4
MXCITB4M	4	3.2
MXCITB5	5	4
MXCITB6	6	4.8

Installation Tool

The inflation tool uses CO₂ cartridges. One gas cartridge will typically fill two bags, but the number of cables and the aggregate OD's of cable can increase or decrease the fill rate. The tool is designed with an ON/OFF switch, and has an automatic pressure monitoring system. *This system is not absolutely water-tight.*

Part No. MXCITT - Inflation Tool

Part No. MXCIGC - CO₂ Cartridge

MaxCell Termination Plugs for Water-Tight Applications

Part No.	Description	No. of Holes
MXTP4	4" Duct Plug	9 holes - three each at 1.1", .9" and .7" dia.
MXTP6	6" Duct Plug	15 holes - 1.1" dia.

Bushings and Gaskets

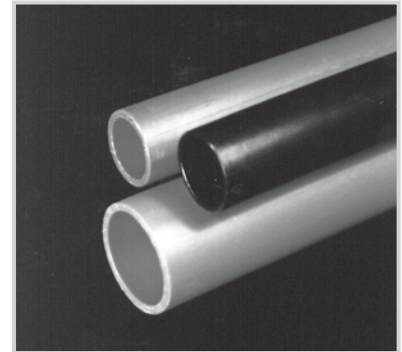
Part No.	Hole Specs. (in)	Variable Brushing Sleeves	For Cable O.D.'s (in)
MXCTBSET070	.7	4	.31-.65
MXCTBSET090	.9	6	.31-.84
MXCTBSET110	1.1	8	.31-1.02

HDPE Conduit

Smooth Wall PE in SDR (I.D. controlled) or SDR (O.D. controlled) and Ribbed PE

- Pre-installed pull rope or tape
- Color coding stripes
- Custom lengths per reel
- Flame retardant
- Pre-lubrication
- Ultraviolet resistance for aerial application

Colors Available: Orange, Black, Red, Blue, Green, Tan, White

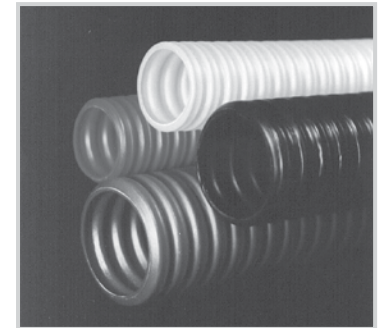


Smooth Wall Polyethylene

Corrugated Wall PE

- Corrugated design provides reduced pulling friction
- Flexible, easy-to-pull
- Color coding stripes
- Flame-retardant

Colors Available: Orange, Black, Red, Blue, Green, Tan, White



Corrugated Wall Polyethylene

Corrugated or Smooth Wall

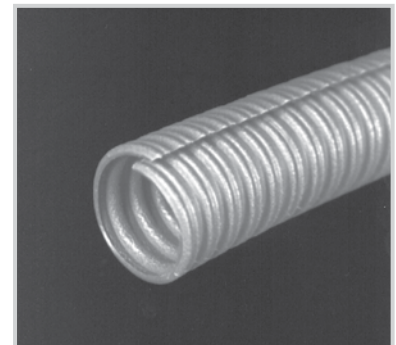
- UL-94 V.O. rated resins
- Flexible
- Custom lengths per reel

Colors Available: Orange, Blue, Gray, White, Green

Slit Corrugated Wall PE

- Slit design for easier installation over existing cable
- Ideal for existing cable in manholes

Colors Available: Orange



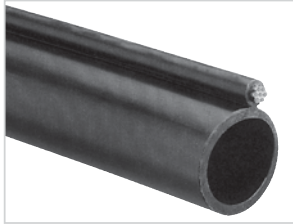
Slit Corrugated Wall
Polyethylene

Corrugated Wall PVC

- Excellent crush resistance
- Available in slit design for easy installation over existing cable
- Low coefficient of friction
- Pre-installed pull rope or tape – if required
- Strength for pulling in either direction from an intermediate manhole without moving rig
- UL-94 V.O. rating

Colors Available: Orange, White, Gray, Blue

HDPE Aerial Figure-8



Nonmetallic, 1-1/4" flexible raceway with a Class A galvanized support strand.

Manufactured from High Density Polyethylene (HDPE), which contains a 2% carbon black additive to provide U.V. protection in aerial environments.

Figure-8 duct offers superior cable protection against damage caused by rodents, projectile objects such as rocks and gun pellets, and harsh weather conditions with a one-step installation process. And because of its strength and durability it can withstand the expansion and contraction caused by seasonal weather changes.

Flexible Corrugated Aerial Figure-8 Conduit



Flexible corrugated inner liner allows for quick field installation, ideal for limited access areas such as water crossings, interstate highway crossings or in heavily wooded areas where additional cable protection is necessary. Sunlight-resistant outer jacket provides UV protection and enough rigidity to protect your fiber for life.

- High strength web
- The high strength steel 6.6M or 10M strand has a moisture resistant flooding compound
- Uses standard industry pole mounting hardware
- Available in four sizes: 1", 1-1/4", 1-1/2" and 2"

From Arcco.

Corrugated Innerduct



- UL Listed Plenum Rated Raceway
- Comes standard with UL Listed Pull Line installed
- Flexible, will not kink
- Lightweight, yet highly crush resistant

- Does not get brittle in cold weather
- Corrugated for lowest possible coefficient of friction
- Standard and custom reel lengths
- Available with multiple lengths on one reel
- Special high tensile versions available (optional)
- Designed specifically for fiber optic cables
- Available in Orange or White
- Footage marks every 5'
- Large, easy-to-read printing

From Endot.

Use the matrix on the right to order innerduct made to your specifications, i.e. ICE050210101.

Specification	Code	Description
Product	ICE =	Corrugated Innerduct
	ICS =	Split Duct
Size	050 =	1/2"
	075 =	3/4"
	100 =	1"
	125 =	1-1/4"
Reel Diameter	150 =	1-1/2"
	200 =	2"
	21 =	34" wood
	22 =	48" wood
	23 =	78" wood
	24 =	84" wood
	25 =	96"x44" steel
	26 =	96"x55" steel
Pull Line	27 =	114"x44" steel
	01 =	Empty
	11 =	1,250 lb. Kevlar/polyester
	12 =	1,800 lb. Kevlar/polyester
	13 =	1,000 lb. Polyester
	14 =	1,250 lb. Polyester
	15 =	1,800 Polyester
	17 =	900 lb. Kevlar
	21 =	3/16" PP rope
	22 =	1/4" PP rope
	31 =	Cable in conduit
Color	01 =	Black
	02 =	Orange
	03 =	Green
	04 =	Red
	06 =	Blue
07 =	White	
08 =	Gray	
09 =	Custom	

Raceway

Plenum Raceways



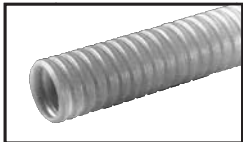
UL listed non-metallic corrugated flexible raceway used for cable and fiber optic management within interior raceways. For use in plenum applications with plenum rated cable. Pull rope pre-installed and footage sequentially marked. IPS dimensions meets TIA 569. Communication orange.

Riser Raceways



UL listed non-metallic pliable raceway for use in riser applications with riser rated cable. Pull rope pre-installed. IPS dimensions meets TIA 569. Communication orange.

HDPE Raceways

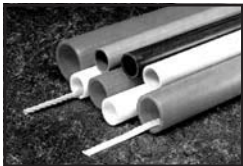


Non-metallic – manufactured from High Density Polyethylene (HDPE). Ideal for pulls under 1,000', HDPE raceways are designed to reduce surface contact

when pulling cable. Lightweight and offering maximum flexibility, installation is easy in small or restricted locations.

Corrugated duct is available in sizes 1" through 2" and is offered in a variety of colors. Custom options are also available to satisfy the requirements of most installations.

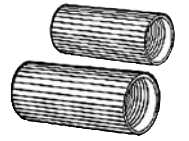
PE Solid Wall Raceways



Non-metallic semi-flexible raceway for use as an innerduct to be pulled through existing conduit systems or direct bury. Maintains flexibility at low temperatures. Pull rope pre-installed and footage sequentially marked. Orange.

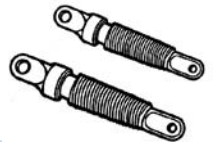
Couplings

Threaded Aluminum



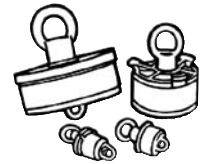
Part No.	Size (in)	Duct O.D. Range (in)	Standard Package	Weight (lbs/100)
E142ET	3.4	.91-1.08	10	14
E142FT	1	1.23-1.34	10	19
E142GT	1-1/4	1.53-1.71	10	25
E142HT	1-1/2	1.80-2.01	10	36
E142JT	2	2.31-2.51	10	44

Pulling Eyes



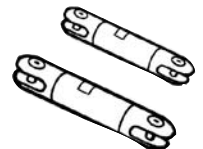
Part No.	Size (in)	Range (in)	Weight (lbs/ea.)
MAPE3	1	.937-1.06	3-1/2
MAPE6	1-1/4	1.187-1.347	4
MAPE8	1-1/2	1.53-1.61	5

Blank Duct Plugs



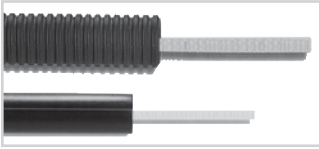
Part No.	Size (in)	Duct I.D. Range (in)	Standard Package	Weight (lbs/ea.)
MAEPG2	1	.96-1.16	50	.10
MAEPG4	1-1/4	1.14-1.48	50	.12
MAEPG3	1-1/2	1.49-1.83	50	.16
MAEPG5	2	1.83-2.36	50	.25
MAEPG7	4	3.94-4.33	50	.50

Pulling Swivels



Part No.	Description	Work/Break Load (lbs)	Size (in)	Weight (lbs/ea.)
MASV4	Non-breakaway	1,800	7/8 x 4-1/2	.53
MASV5	Non-breakaway	600	5/8 x 4	.50
MASV6	Breakaway	600	7/8 x 4-1/2	.55
MASV7	Breakaway	600	5/8 x 3-1/2	.19
MASV8	Breakaway	450	5/8 x 3-1/2	.19

Polyester Fiber Pulltape™



Available from 400# tensile strength through 6000# tensile strength in Aramid fibers, Aramid/Polyester blended and Polyester fibers construction. Reel sizes available from 3,000' through 100,000'. TRACERTAPE™ and TRACERTAPE II™ allow the locating of empty duct and all dielectric systems. From Fibertek.

Part No.	Construction	Tensile Strength (lbs/kg)
WP900	Woven	900/408
WP1250	Woven	1250/567
WP1800	Woven	1800/816
WP2500	Woven	2500/1134
WP4000	Woven	4000/1814
WP6000	Woven	6000/2722

Other tensile strengths also available. Call with specifications.

Pulling Grips Indispensable for installing cables or ducting



- Hand woven for strong performance
- Flexible eye allows cable to be pulled more easily through smaller ducting
- By selecting the most suitable strand, the tension distribution characteristics can be adjusted as needed
- Ease of installation; low maintenance; strong grip
From DCD.

Breakaway Swivel Defines breaking points during cable installation



Combines a high safe working load with a compact design. All sizes incorporate an oil seal and are manufactured from high strength stainless steel. All sizes are pull tested to verify the 3:1 safety factor and are fully capable of rotation at full working load. Supplied with slotted clevis pins; breakaway pin kits have 10 pins. From DCD.

Underground Service Boxes

from Quazite

A precast polymer concrete, fiberglass reinforced for exceptional strength, rigidity and light weight. Resistant to sunlight, weathering and chemicals, and unaffected by freeze/thaw cycles. Easy to handle and can be stacked to obtain additional depths. **Quazite® is the first in the industry able to offer a UL Listed underground enclosure.** UL Listing assures strict compliance with SCTE and Western Underground provisions.



Applications

Standard Covers are designed for sidewalk applications with a safety factor for occasional non-deliberate light vehicle traffic.

Design Load: 15,000 lbs. over a 10" square with a minimum test load of 22,568 lbs.

Heavy Duty Covers (available for PG and PC styles) are designed for driveways, parking lots and off road applications where subject to occasional non-deliberate heavy vehicles.

Boxes - UL Listed

Part No.	Description	Other box sizes available upon request.						Weight (lbs/ea.)
		Outside Dimensions (in)			Inside Dimensions (in)			
		Width	Length	Depth	Width	Length		
PC1118BA12	Standard box, open bottom	13.5	20.5	12	10.25	17.25	37	
PC1118BB12	Std box w/2 mouseholes, open bottom	13.5	20.5	12	10.25	17.25	36	
PC1118BA18	Standard box, open bottom	13.5	20.5	18	10.25	17.25	53	
PC1118BB18	Std box w/2 mouseholes, open bottom	13.5	20.5	18	10.25	17.25	52	
PC1118BG12	Gasketed box, open bottom	13.5	20.5	18	10.25	17.25	37	
PC1212BA12	Standard box, open bottom	14	14	12.75	10.5	10.5	36	
PC1324BA12	Standard box, open bottom	16.25	27.25	12	12.625	23.625	50	
PG1324BA12	Standard box, open bottom	15.5	25	12	9.75	19.25	53	
PG1324BA18	Standard box, open bottom	15.5	25	18	9.75	19.25	72	
PC1324BB12	Std box w/2 mouseholes, open bottom	16.25	27.25	12	12.75	23.75	50	
PG1730BA12	Standard box, open bottom	19.25	32.25	12	13.5	26.5	67	
PG1730BA18	Standard box, open bottom	19.25	32.25	18	13.5	26.5	94	
PG2436BA18	Standard box, open bottom	26	37.625	18	18.625	30.25	141	
PG2436BA24	Standard box, open bottom	26	37.625	24	18.375	30.125	180	

Covers - UL Listed

Part No.	Description	Dimensions (in)			Weight (lbs/ea.)
		Width	Length	Depth	
PC1212CA0009	Locking cover - Blank	12.625	12.625	.75	12
PC1212HA0009	Heavy duty locking cover - Blank	12.625	12.625	.75	12
PC1212HA0044	Heavy duty locking cover - Traffic	12.625	12.625	.75	12
PC1118CA0009	Locking cover - Blank	11.5	18.5	.75	13
PC1118CA0044	Locking cover - Traffic	11.5	18.5	.75	13
PC1118CG0009	Locking cover for gasketed box - Blank	11.5	18.5	.75	13
PC1118HA0009	Heavy duty locking cover - Blank	11.5	18.5	.75	13
PC1324CA0009	Locking cover - Blank	14.25	25.25	.75	23
PG1324CA0009	Locking cover - Blank	13.75	23.25	2	33
PG2436CA0009	Locking cover - Blank	24	35.625	3	100
PG2436HA0009	Heavy duty locking cover - Blank	24	35.625	3	115
PG1324HA0009	Heavy duty locking cover - Blank	13.75	23.25	2	51
PC1730CA0009	Locking cover - Blank	18.25	31.25	.75	33
PG1730CA0009	Locking cover - Blank	17.25	30.5	2	52
PG1730HA0009	Heavy duty locking cover - Blank	17.5	30.5	2	83

See below for examples of logos available upon request. Specify logo number when ordering covers. Plain cover is 09.

- CATV (10)
- Communication (12)
- Controls (14)
- Electric (17)
- Fiber Optics (21)
- Ground (24)
- High Voltage (26)
- Lighting (29)
- Street Lighting (41)
- Telephone (43)
- Traffic (44)
- Traffic Signal (46)

Service Boxes and Vaults

from CDR Systems Corp.

- **Light Traffic Boxes** — Rated for use in sidewalks, paved pedestrian areas or areas not subject to heavy vehicular traffic.
- **Heavy Duty Boxes** — Rated for uses in alleys, driveways, parking lots or areas subject to heavy vehicles.
- **Street Rated Boxes** — Suitable for use in streets subject to AASHTO H-20 loads and are available in certain sizes.
- **Boxes with different depths, special features or in different sizes are available and can be made to order.** To insure strength and rigidity, boxes more than 30" deep should have a bottom.



The ordering matrix below shows how the CDR Systems numbering system allows you to design your own box assembly from the many options available.

Specification	Code	Description
Logo	P =	Power B(P) Box (Pad)
	T =	Telephone C = Cable TV
	W =	Water G = Gas
	S =	Traffic Signal
Product	A =	Assembly E = Extension
	B =	Box P = Pad
	C =	Cover
Closure	Standard	0 = Not bolted
		1 = 1/2" Penta head bolted
		2 = 1/2" Hex head bolted
		3 = 3/8" Hex head bolted
	Adjust-to-Grade	5 = Not bolted
		6 = 1/2" Penta head bolted
		7 = 1/2" Hex head bolted
		8 = 3/8" Hex head bolted
Rating	0 =	Light traffic
	2 =	Heavy duty
	3 =	Straight wall, light traffic
	4 =	Straight wall, heavy duty
	5 =	Street rated
Panel	B =	Integral bottom
	C =	Cast iron reader door
	E =	Drop-in reader door
	T =	Twin pad
	W =	Western underground
	HC =	Hinge cover
	IP =	Intercept panel
TR =	Touch read	

Enclosures

from Oldcastle Precast®

OldCastle Precast has united the people and products of Carson, Christy, BES, Synertech and CES to form Oldcastle Precast Enclosure Solutions.

Carson

With over 38 years of experience, Carson is the world's leading brand of high density polyethylene plastic grade-level enclosures. Carson enclosures, Specified and Preferred Worldwide, are strong and virtually stress-free, dependable, lightweight, easy to install, ultraviolet stabilized with anti-oxidants, chemical resistant and impervious to moisture. Carson products are used in the turf and irrigation, municipal water, telecommunication, broadband and electric utility markets providing a broad product offering for your project requirements.



Christy

Christy Concrete provides solutions for the in-ground construction of water systems and utilities. Using proven manufacturing procedures and the highest quality materials, Christy products meet or exceed exacting industry requirements. Based on superior strength and durability, Christy boxes have received the highest certification from major public works and utility companies.

Synertech

Synertech has combined the exceptional strength and durability of high density polymer concrete with the tough and lightweight qualities of sheet molding compound to create exceptional splice boxes, pull boxes, equipment enclosures, meter boxes and valve boxes. With these two patented materials with a patented manufacturing process, Synertech produces the toughest and lightest underground enclosures on the market today.

Plastibeton

The Plastibeton Channel System is used by power, utility, railroad and transit companies throughout North America to contain, protect and allow easy access to power, control, signal, communication and fiber optic cables. Made of a unique, patented high density polymer concrete, the system offers flexibility and strength as well as exceptional resistance to freeze/thaw conditions.

Underbridge Products

Bullet-Resistant, Extra Heavywall Fiberglass Conduit

Ideal for Underbridge Installations

Benefits

- 4" heavy wall conduit is bullet resistant to provide tough protection for sensitive fiber optic cables
- Low initial cost combined with ease of installation reduces overall project costs compared to Schedule 40 steel conduit
- Lightweight

Features

- Extra heavy walls of filament-wound fiberglass
- Lightweight – 20' length weighs approximately 55 pounds, compared to 200 lbs. for Schedule 40 steel
- Use 60% less bridge installation hangers
- Smooth inner walls make cable pulling easier
- Thermal stability means less expansion and contraction, plus fewer joints. Operating range -40°F to 275°F
- Corrosion Resistant, easier to handle for installation

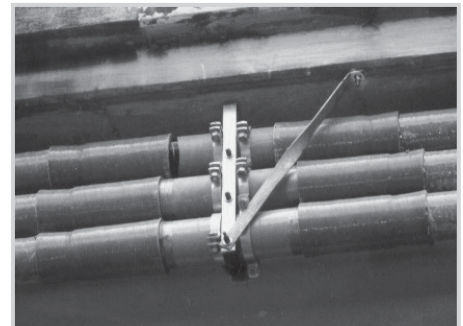
We offer a complete line of fittings, adapters and elbows that use the same bullet-resistant materials as the conduit. We will quote to your specifications. Call for more details.

Additional Conduit

- PVC light wall
- PVC Power and Communication Duct
- Schedule 40 and Schedule 80
- Split duct
- Split steel
- Cut steel
- Notched steel
- Galvanized steel



Atchafalaya Basin Bridge,
18 miles long, Lafayette, La.



Suspending conduit under bridge structures offers significant economic advantage over underwater or buried installations.

Reinforced Epoxy, Standard Wall Fiberglass Conduit

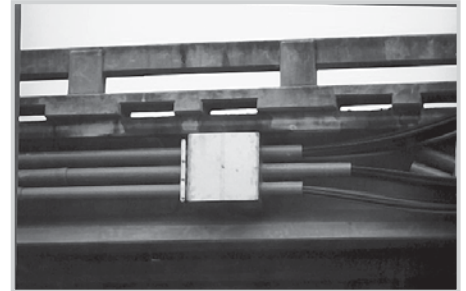
Good for Underbridge Installations

Benefits

- Easier to handle for installation, only 1/10 the weight of Schedule 40 galvanized steel
- Year round installation - will not become brittle in low ambient temperatures or deflect excessively in high ambient temperatures
- Easy installation. The integral bell and spigot with adhesive or gasketed joint results in quick effortless joining and a watertight fit. Can be installed in virtually any environment.

Features

- Low coefficient of friction – smooth interior surface results in longer cable pulls with shorter access points needed, and improved cable cut-through resistance
- High compressive and impact strength – memory capabilities allow fiberglass to retain its original shape after impact or crush
- Non-conductive – UL listed; ideal for electrical applications
- Cable fault – fiberglass conduit will not allow the cable conductors to weld themselves to the inside of the conduit in the event of a cable fault (short circuit), as can happen with steel or PVC
- Low coefficient of thermal expansion – Epoxy Fiberglass = 1.25×10^{-5} /in./in./F vs. PVC = 3.5×10^{-5} /in./in./F; this means PVC conduit expands and contracts three times the rate of Fiberglass conduit over the same temperature range
- Chemical and corrosion resistant – resists corrosion better than steel or PVC conduit in harsh environments
- Non-toxic, flame retardant – emits no toxic halogens above trace levels. Meets UL requirements for UL 1684, Section 5.12 for Flame Retardant Properties
- U.V. Resistant - U.V. inhibitors are added to the resin to promote longer system life. Available in a wide variety of colors to match your structure



Conduit Support System Products

A full line of all the products needed to complete your support system:

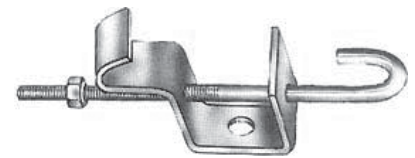
- Hangers – hanging or base mounted, and hanger support clamps for attaching duct support hangers to I-beams
- Eye Nuts and Eye Nut Extensions
- Side Mounting Brackets
- Side or Top Beam Clamps
- C-Clamps
- Angle Support Bracket
- Bridge Hanger Tabs
- Guy Clamps and Strands
- Expansion Anchors
- U-Bolts
- Epoxy Inserts for use in drilled holes, and Concrete Inserts for cast in place
- Steel Expansion Joints
- Pipe Strap
- Universal Angle Brackets – side mounted bracket creates a shelf for resting conduit, or mount upside down for hanging conduit
- J Hangers – support single conduit by hanging or side mounting
- Pipe Roll with Sockets and Adjustable Steel Yoke Pipe Roll with Swivel – both products are designed for suspending pipe where longitudinal and vertical adjustment is required
- Adjustable Roll Support
- Adjustable Clevis – for suspending steel pipe
- PVC conduit and bends, expansion joints, split stop rings, female threaded adapters and double bell couplings
- Galvanized Conduit and Bends



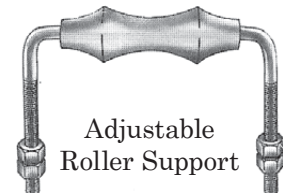
Pipe Strap



J Hanger



Adjustable Clamp



Adjustable Roller Support

IceFree™ Antifreeze Gel System from American Polywater®

Specialty, non-freezing gel is pumped into conduits (around cable) to prevent water ingress and subsequent ice formation, protecting fiber optic cable from icepressure-induced microbends. This patented system has successfully protected fiber optic cable in thousands of bridge exposures to below freezing temperatures.

- Compatible with cable jacket and duct
- Safe for the environment
- Soft gel allows cable removal for repair or upgrade
- Install once for multi-year protection

Installation video and literature available. **Call for package options.**

